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1192617 - R8 SDMS

KOOTENAI DEVELOPMENT IMPOUNDMENT DAM
NOVEMBER 2010 ROUTINE OWNERS INSPECTION

Prepared for: The Remedium Group

Prepared by: Kurt Hafferman, P.E.

BILLMAYER & HAFFERMAN INC.
2191 3rd Avenue East
Kalispell, Montana 59903

Inspection Date: November 30th, 2010
Report Date: December 2nd, 2010



INSPECTION DATE: **November 30th, 2010**
REFERENCE: **NOVEMBER 2010 ROUTINE OWNERS INSPECTION**

OBJECTIVES

The end of November 2010 routine owner's inspection was conducted on Tuesday November 30th, 2010. Personnel included Kurt Hafferman, P.E. and Dan Nelson from BHI and Brandon Chapman and Jeremy Peterson from Chapman Construction.

The inspection was conducted as a routine owner's inspection. Project tasks to be completed included:

1. Safety meeting with Chapman and BHI
2. Check Upper Rainy Creek inflows
3. Inspect the embankment dam
4. Inspect principal spillway
5. Inspect outside and inside of drains
6. Read flumes and weirs below the drain outlets.
7. Read staff gauges at LRC-01, F-Seep, and LRC-06
8. Decontaminate and depart site

RESULTS

The routine owner's inspection began at 10:00 a.m. and ran until 12:30 p.m. The weather was partly cloudy and calm with light snow. The temperature ranged between 28° and 30°. There is about 9" of snow on the ground and travel and walking was difficult and hazardous. There were no weather or equipment impediments that affected the inspection. Copies of photographs from the date of the inspection are included in Appendix 1.

Copies of the Routine Owners Inspection Report as filled out after the inspection and copies of the field notes are provided in Appendix 2. The following are the results of each of the eight (8) tasks above;

1. **Safety Meeting:** Jeremy Peterson is assigned as the health and safety officer and is responsible for equipment condition, decontamination procedures, and over all KDID site safety. The safety meeting with Chapman Construction's Jeremy and Brandon included discussion of the work tasks and procedures for the day, winter driving safety and concerns and overall job site safety. Personnel safety was also discussed relative to winter conditions and snow. Equipment was checked and no issues were found and all personnel were equipped and prepared for the cold and snow conditions. Standard equipment used included: warm weather gear under double Tyvek suits, rubber booties, double vinyl gloves, and North® full face mask. Booties were taped at the top and Tyvek suits are taped at the zipper on the outer suit. Kurt Hafferman used his Sorrell® boots outside of the Tyvek suits and the Sorrell's were cleaned on site before departing the site.
2. Upper Rainy Creek was checked and the URC-02 flume was read. The flow in Upper Rainy Creek has increased since September when readings were last taken.
3. No bulges, erosion or other anomalies or changes were noted on the embankment from the upstream face to the toe.

4. No water has run in the spillway this year and no water is expected until spring. No changes were noted since the last inspection.
5. Drains were inspected and the flows in the drains and stream channel below the drains were recorded. All drain flows decreased with the exception of drain 12 which showed a slight increase over September flows. Drain 5 was recorded at it's lowest level since BHI began inspections. A graduated cylinder was used to check for sedimentation in the water at each drain; none was noted. Drain flows were clear and steady.
6. All weirs and drains were read, no anomalies were found. Results are shown in Table 1 below.
7. Gauge height readings from the flumes and weirs instream and below the toe drains were taken. Results are shown in Table 1 below.
8. Initial personnel decontamination was conducted at the F-Seep Flume before re-entering the truck. Due to snowy conditions and a frozen well, equipment was not pressure washed but was brushed off and inspected until it was clean. Final decontamination, removal of the inner Tyvek suit and removing the mask, took place at the support trailer.

The readings from all of the inflow and outflow streams, including the flumes, weirs, and reservoir levels are shown in Table 1 below.

Table 1: Flow Measurement Results

Station	GH Reading (ft.) GH Reading Sept.	GH Reading (ft.) GH Reading this Month	GH Reading Difference from Sept.	Flow (gpm)/VOL (AF) Sept.	Flow (gpm)/VOL (AF) This Month	Flow/VOL Difference from Sept.	Temp °F
URC02	0.305	0.32	+0.015	84.8 gpm	92.9 gpm	+8.1 gpm	N/R
Fleetwood Creek	0.10	N/R		11.13 gpm	N/R		N/R
Reservoir	0.02	N/R		13.0 AF	N/R		N/R
F 1-2-3-4	0.14	0.12	-0.02	12.7 gpm	9.47 gpm	-3.23 gpm	46°
W 5	0.031	0.01	-0.021	0.20 gpm	0.01 gpm	-0.19 gpm	44°
D6	0.937	0.979	+0.042	119.03 gpm	60.1 gpm	-58.93 gpm	45°
F 7-8	0.13	0.12	-0.01	7.76 gpm	6.55 gpm	-1.21 gpm	44°
W 12	0.198	0.208	+0.01	20.14 gpm	22.75 gpm	+2.61 gpm	55°?
F -Seep	0.14	0.04	-.10	20.1 gpm	2.24 gpm	-17.86 gpm	N/R
LRC01	0.66	0.67	+0.01	161 gpm*	257 gpm	+96 gpm	N/R
CC02	0.15	N/R		91.57 gpm	N/R		N/R
LRC02	0.31	N/R		289 gpm	N/R		N/R
LRC06	0.38	0.44	+0.06	396 gpm	497 gpm	+101 gpm	N/R

N/R - Not Read due to access

* - Estimated flow

? - Suspect Reading

DISCUSSION

It is to be remembered that the October inspection was abbreviated and did not include piezometer or stream flows. This report will cover the time from the end of September to the end of October for inflows and piezometer levels as compared to drain flows.

In general inflows, reservoir levels, drain outflows and lower Rainy Creek flows are stable to slightly falling. The inflows from Upper Rainy Creek have increased from 84.8 gpm to 92.9 gpm, an increase of 8.1 gpm or 8.7% from the end of September to the end of November. The weather has been cold with temperatures as low as -15° F in the last week. There has been 2.2 inches of precipitation since the October Inspection and 3.3 inches since the September inspection when flumes were last read. The precipitation in this area as of November 30, 2010 is reported as 46% of normal at Banfield Mountain site which is just northwest of the project, so the water year beginning October 1, 2010 is reported as dryer than normal so far, which shows in the reservoir levels visually observed.

Due to snow depth, access to the site required a 4x4 vehicle so Chapman's truck was used instead the ATV. Even using the truck the snow was too deep to access all the areas visited under normal conditions. As such reservoir levels, CC-02, LRC-02, and Fleetwood Creek readings were not taken. It is anticipated that snowmobiles will need to be used for access for the remainder of the winter season.

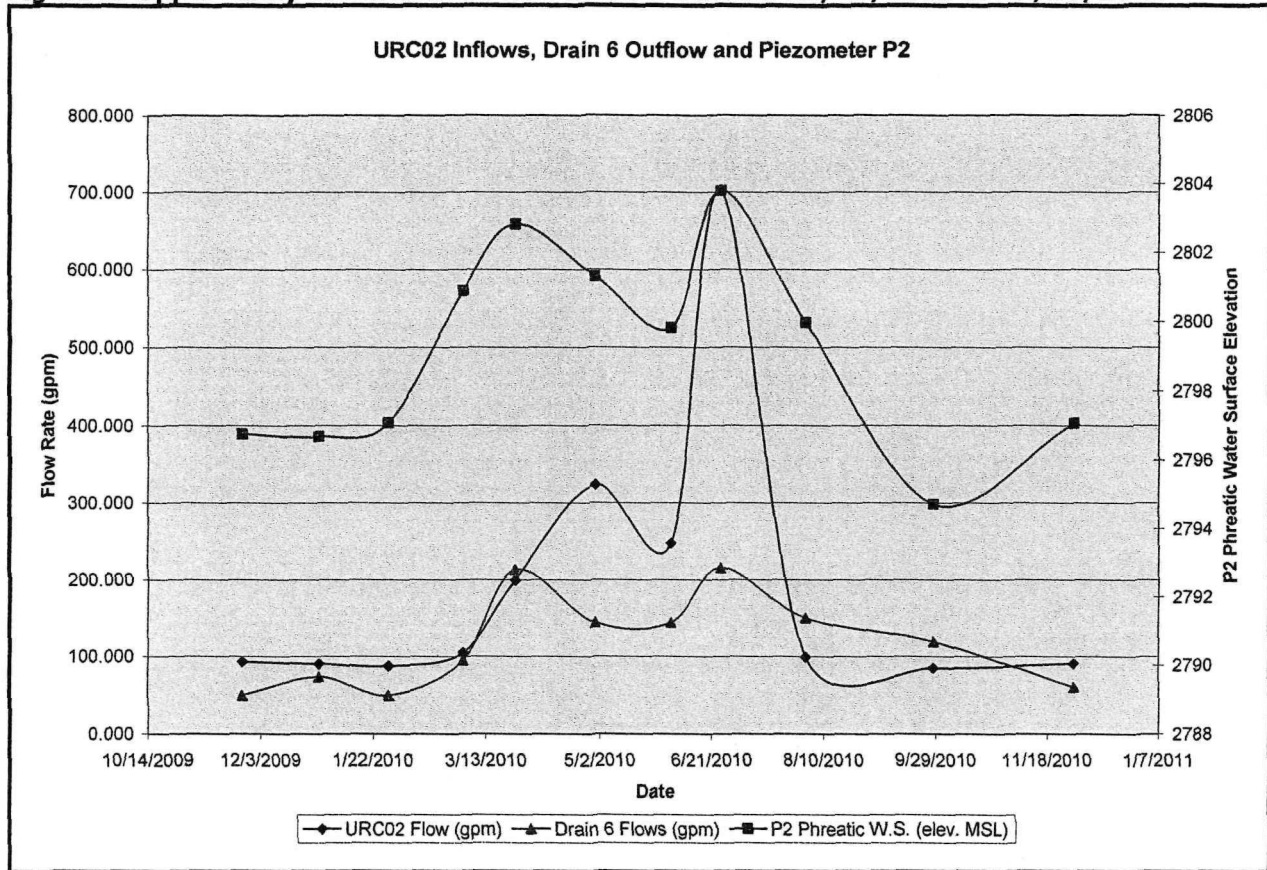
Drain 6, the main drain at the toe, decreased flow from 119.03 gpm to 60.1 gpm, a decrease of 58.93 gpm, or 49.5% since September measurements. It was surprising to see such a decrease in Drain 6 flows at the same time that we have seen the inflows increase since September; at least from Upper Rainy Creek. We also noted that the piezometer readings have also increased since September and that would normally be another reason we would have expected drain flows to increase.

Although it is not unusual to have an increase of inflows and a rise in piezometers that is not immediately tracked by drain flow, it is still unusual. Drain 6 flows and piezometers will be checked with special attention next month. We do anticipate stabilized readings on the inflow next month and stabilized to slightly falling piezometers with a slight increase in Drain 6 flows next month.

A graph of the inflows and drain 6 flows from November 25th of 2009 to this inspection on November 30th of 2010 is shown in Figure 1.

These graphs show that the highest phreatic water surface in the piezometers only rose to the levels such as those seen in 2003 or 2004. The rises are typical of dry weather years. This year's precipitation was reported as 85% for the 2009-2010 water year.

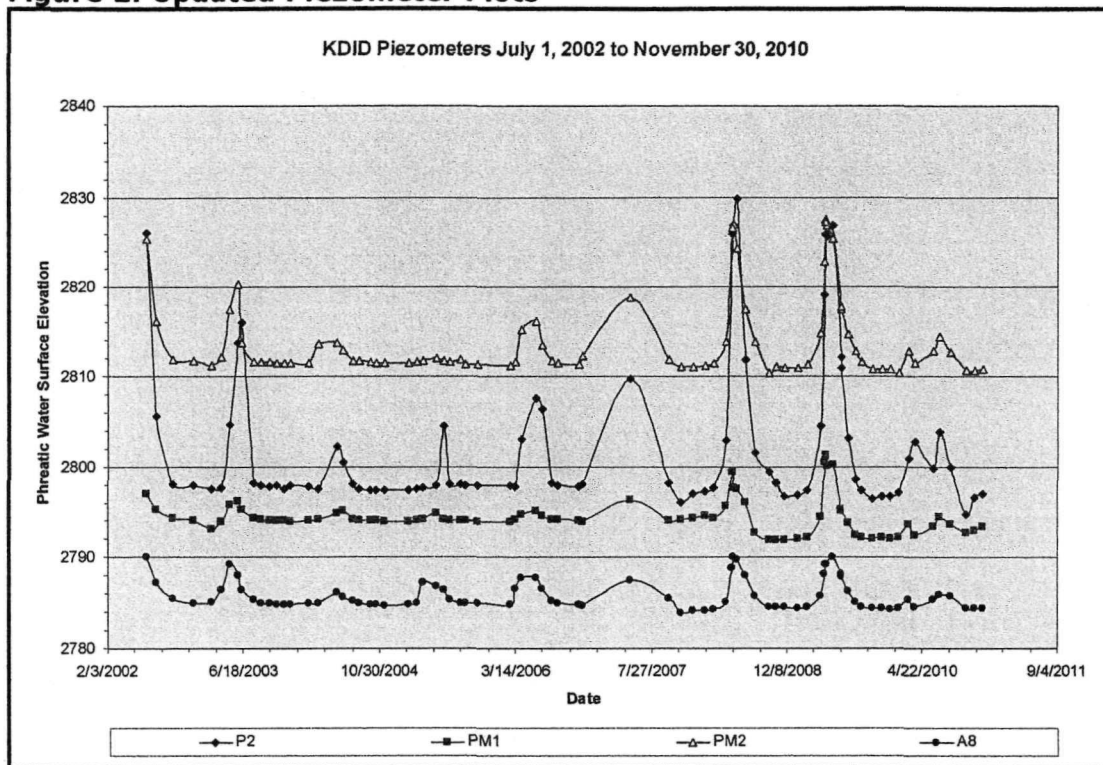
Figure 1: Upper Rainy Creek Inflows and Drain 6 Outflow 11/25/2009 to 11/30/2010



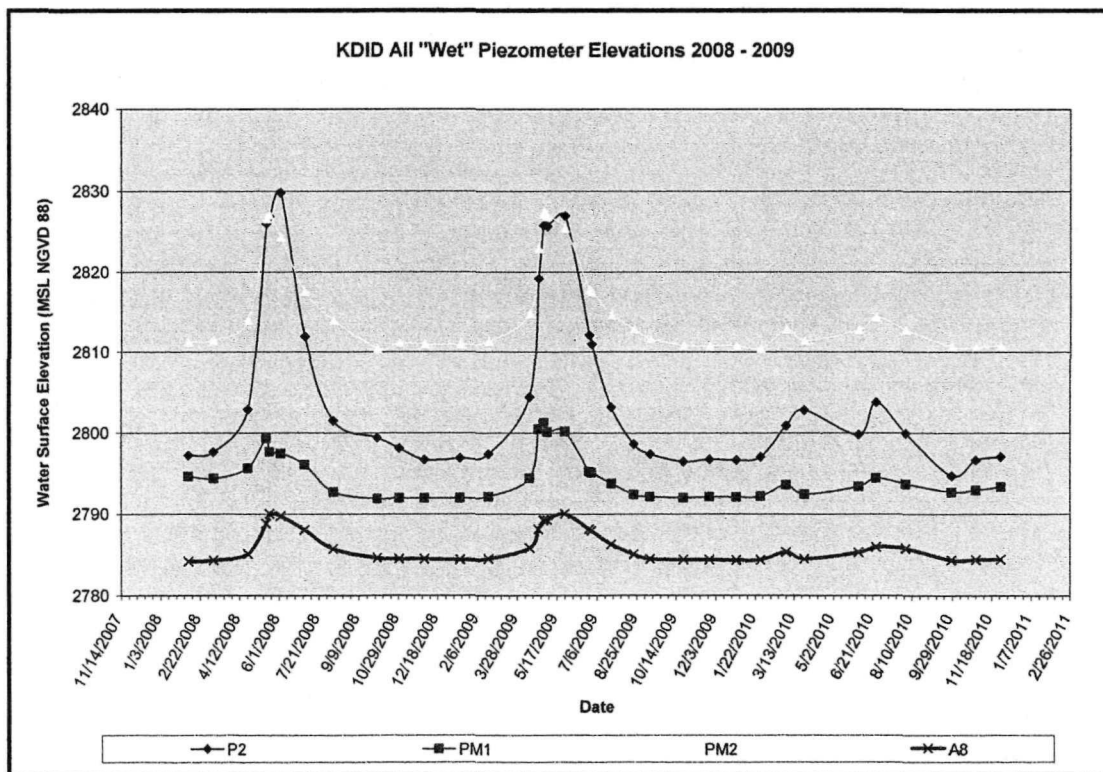
Review of the graph above indicates we have arrived at typical low drain flows for this time of year. Drain 6 and URC-02 show readings similar to November 2009 readings and as such we expect to see stabilized flows in and out of the reservoir in the coming winter months.

The piezometer and drain flow data has been updated and the new data sheets and newly updated graphs are attached to this report in Appendix 3. Kurt Hafferman was responsible for all readings taken as determined after last month's Piezometer inspection. A copy of the piezometer graph is shown in Figure 2 below;

Figure 2: Updated Piezometer Plots



The graph above shows the rise in phreatic water surface that occurred in late April which was followed by a decline in May and then another rise in late June and then the typical steady decline beginning in July. A second graph is shown in Figure 3 below which is a graph of the same piezometers over a shorter period of time.

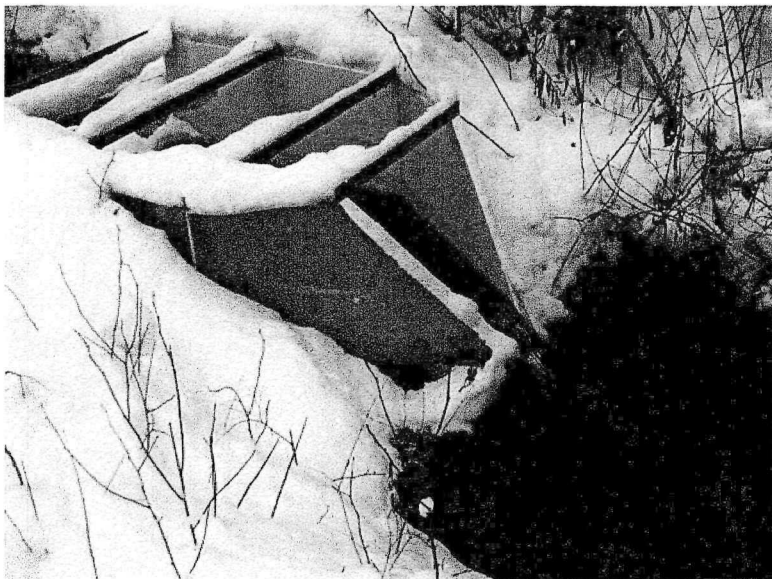


APPENDIX 1

SITE PHOTOGRAPHS



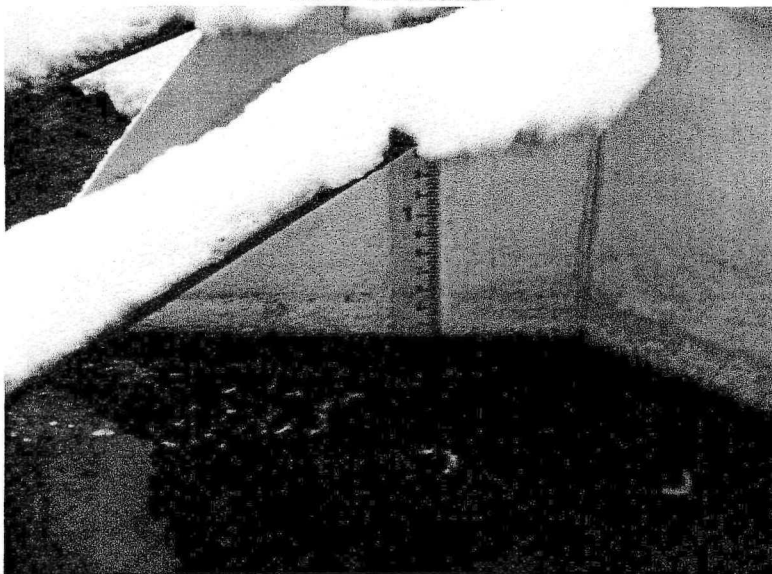
BH BILLMAYER & HAFFERMAN, INC.



URC-02 Flume



URC-02 looking upstream



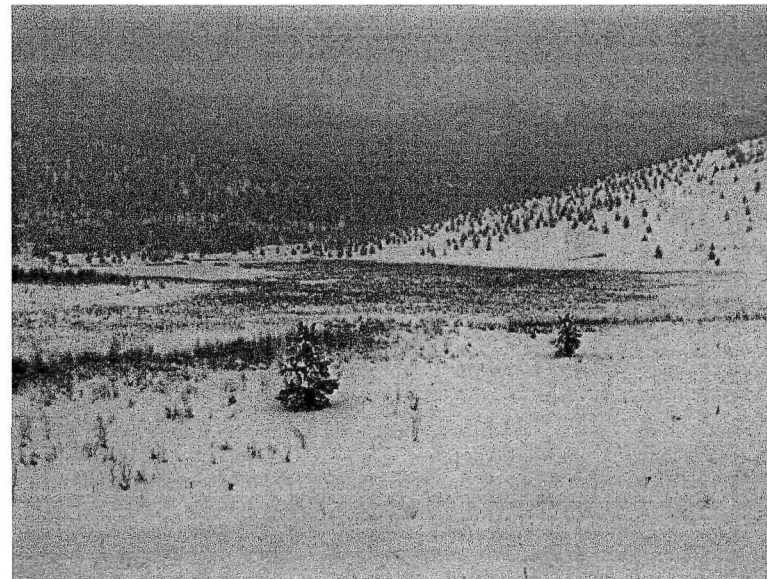
URC-02 Gauge



URC-02 looking downstream



Looking right across upstream crest of dam



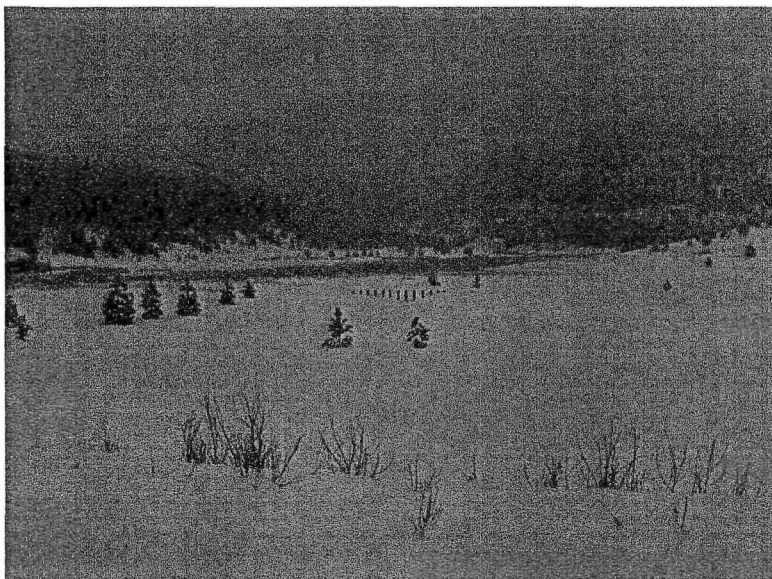
Looking over reservoir from right crest of embankment dam



Looking out over reservoir



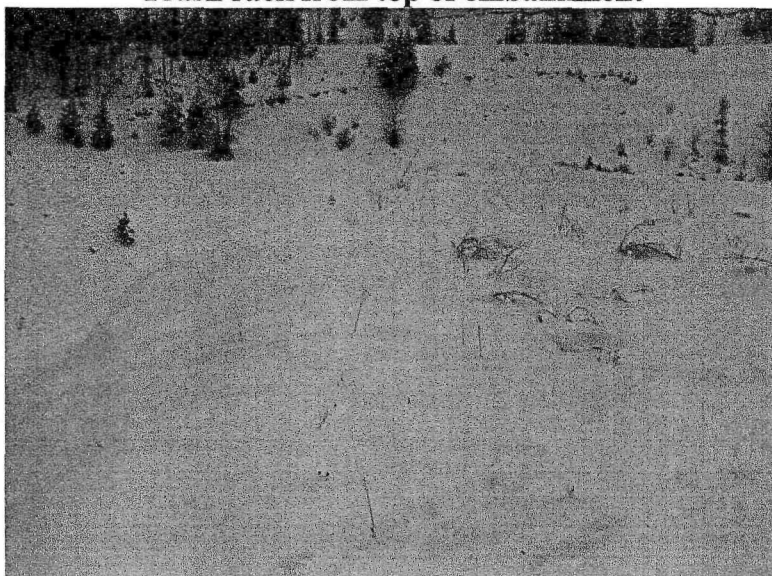
Looking left across upstream embankment



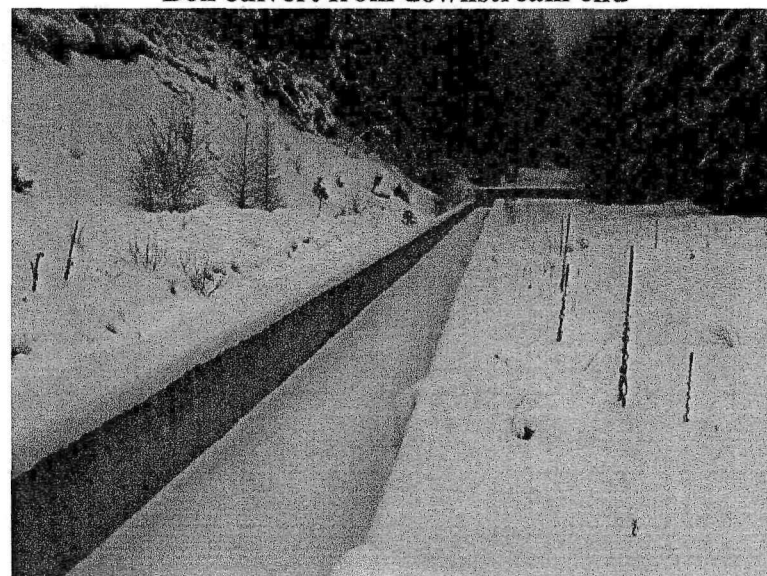
Trash rack from top of embankment



Box culvert from downstream end



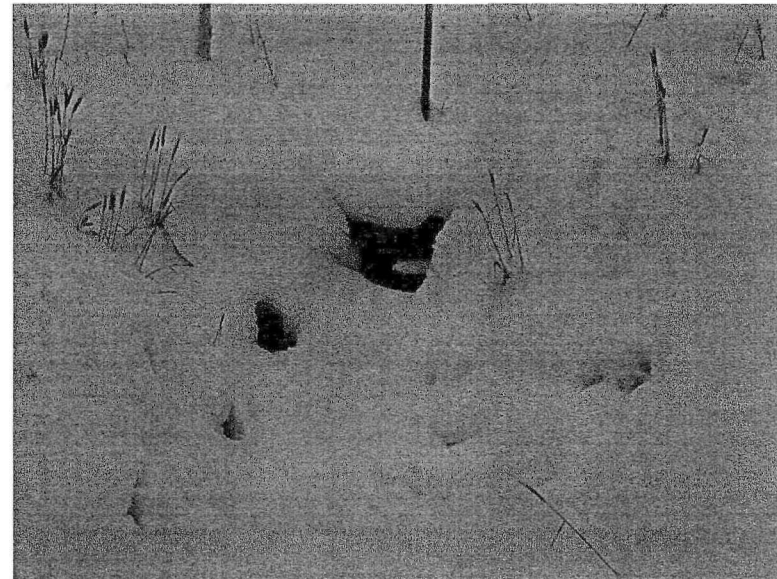
Looking left along upstream crest of dam from center



Spill way from the end of the box culvert



Inside spill way from the end of the box culvert



Drains 1 and 2



Looking across downstream embankment to right abutment



Drain 3



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Inside Drain 3



Drain 4 close-up



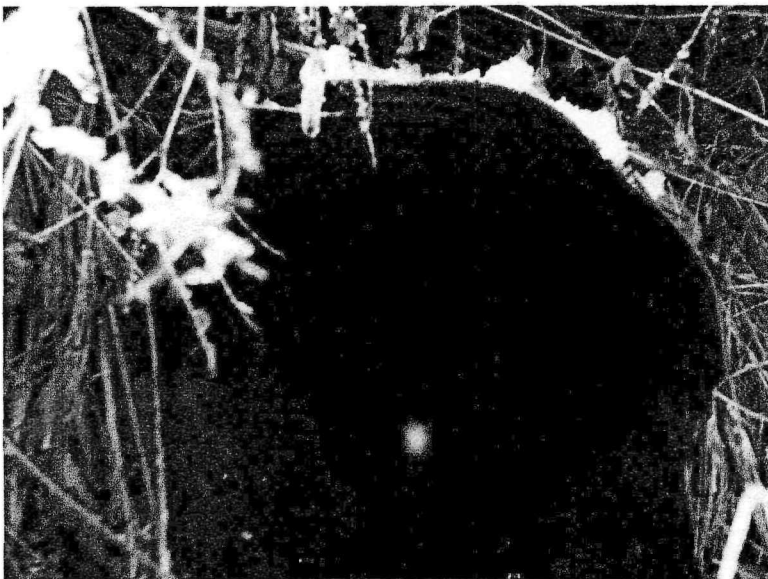
Drain 4



Inside drain 4



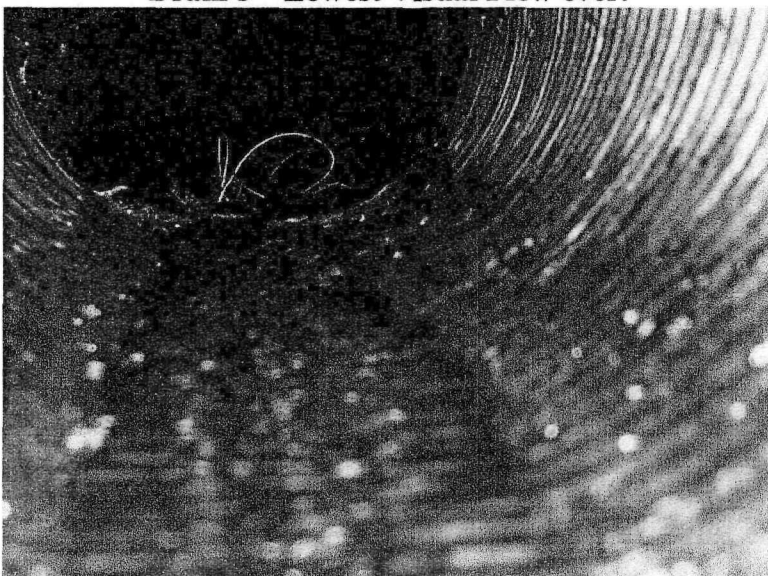
BILLMAYER & HAFFERMAN, INC.



Drain 5 – Lowest Visual Flow ever.



Inside Drain 5



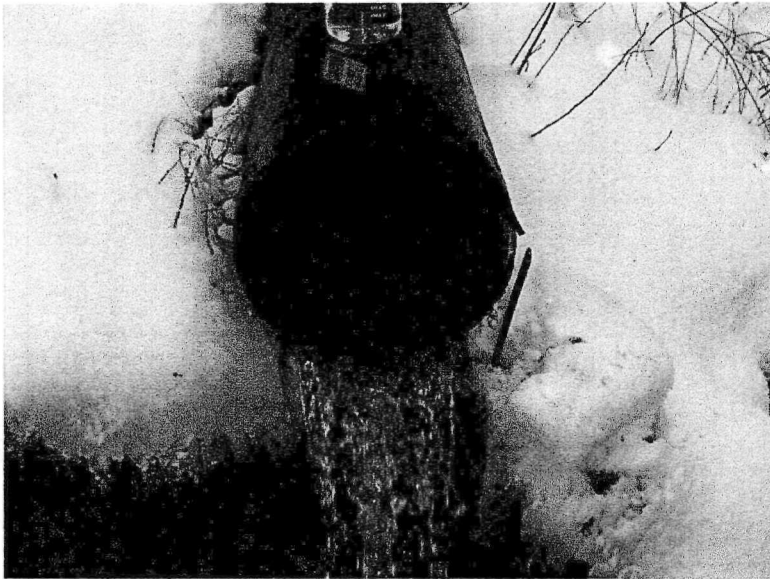
Inside Drain 5



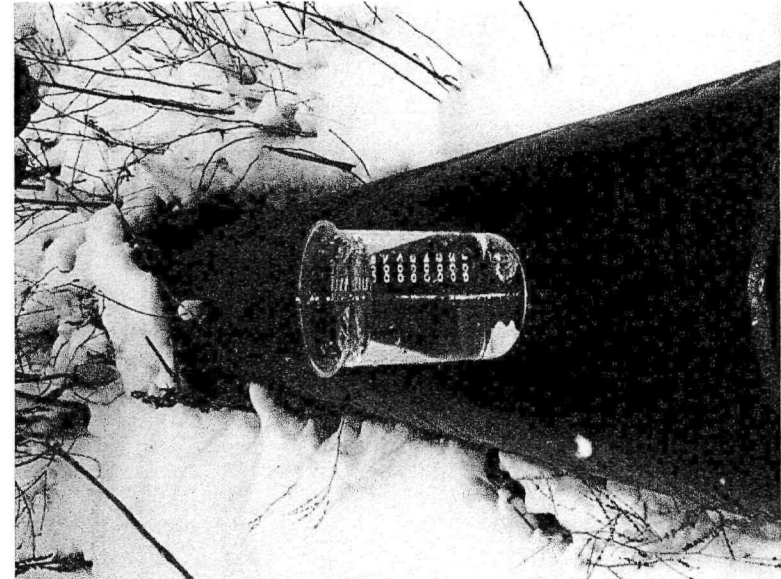
Drain 6



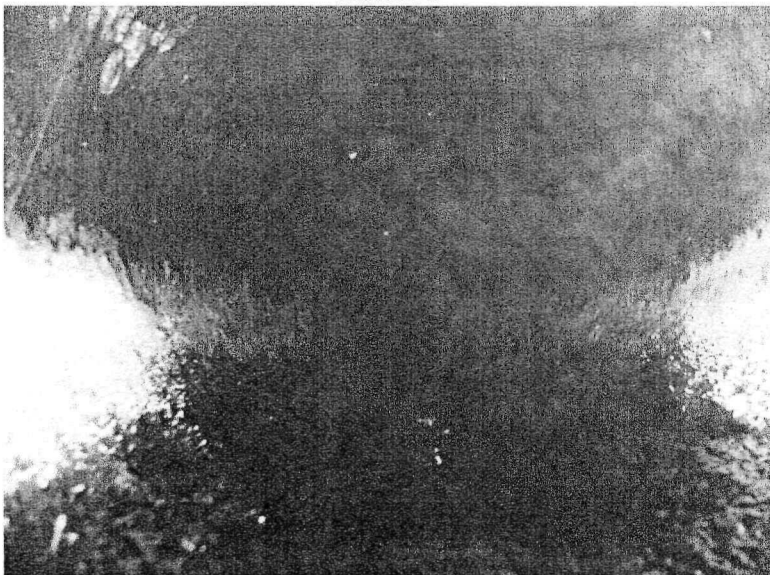
BILLMAYER & HAFFERMAN, INC.



Drain 6



Clear water sampled from Drain 6



Inside Drain 6



Drain 7



BILLMAYER & HAFFERMAN, INC.



Flume 7-8



Drain 9



Inside Drain 8



Inside Drain 9



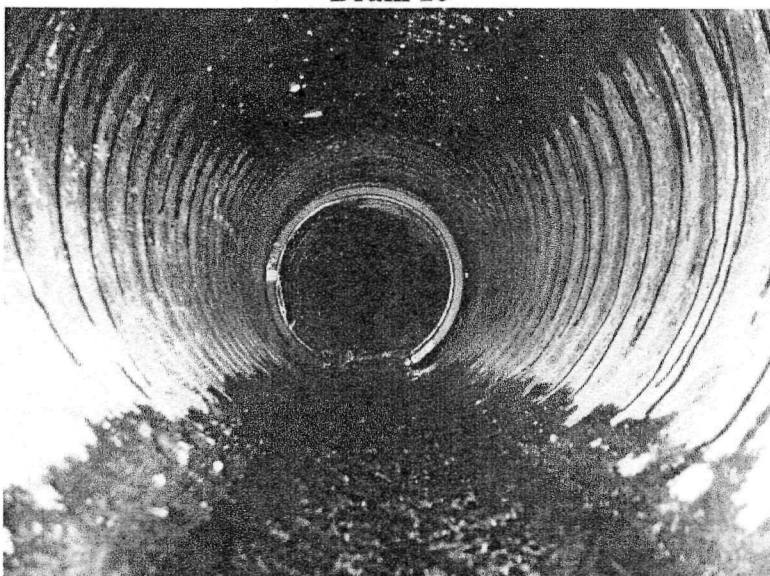
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Drain 10



Inside Drain 11



Inside Drain 10



Drain 12



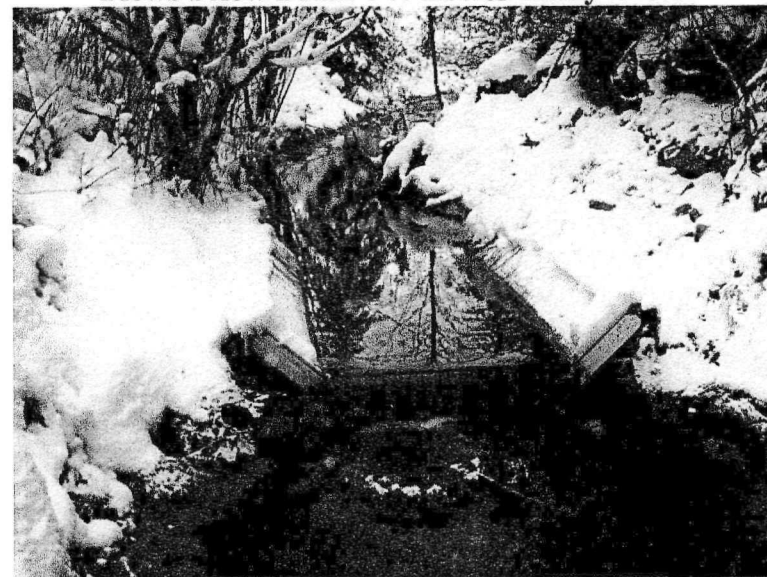
Inside Drain 12



Flows below Drain 6 to Lower Rainy Creek



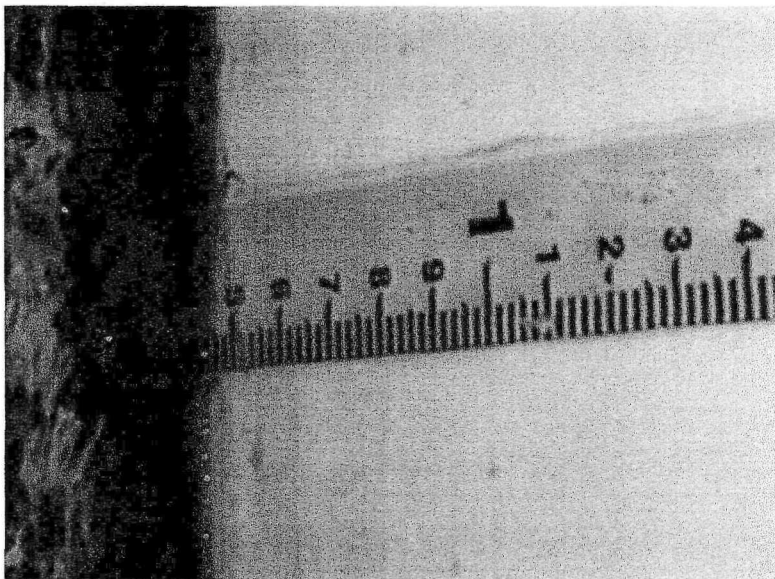
Weir Drain 12



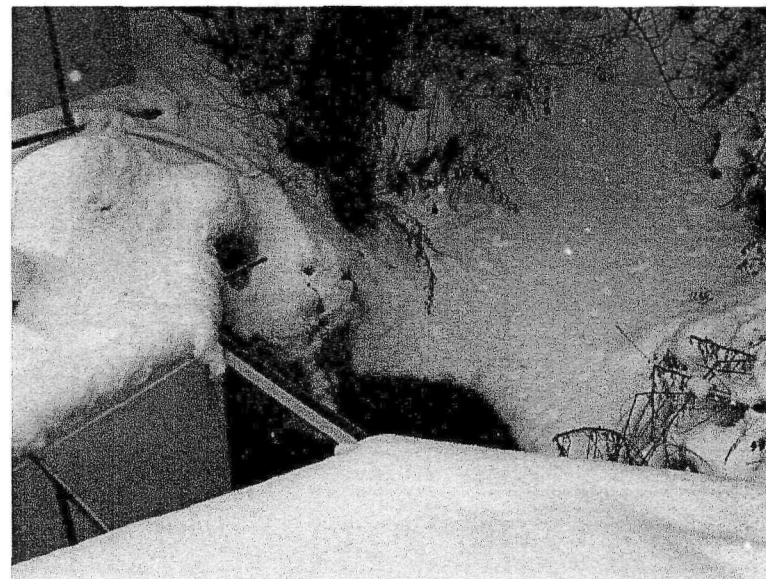
LRC-01 Flume



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LRC-06 Gauge Height



LRC-06 looking upstream



LRC-06 looking downstream

APPENDIX 2

PERIODIC INSPECTION REPORT & FIELD NOTES

PRINCIPAL INSPECTOR ON SITE: Kurt Hafferman, P.E.				OBSERVATION DATE (S)		30-Nov-10	
OTHER PERSONNEL ON SITE: Dan Nelson from Billmayer & Hafferman, Inc. and Brandon Chapman and Jeremy Peterson from Chapman Const.				WEATHER CONDITIONS		Cldy, cool ~32°, calm, light snow, ±9" of snow on ground	
Work Tasks: Measure flow, check URC02, measure piezometers, check box culvert, check drains, drain flow, measure LRC01, gauge height at LRC06.				EQUIPMENT		Well probe, long fiberglass tape, camera, flashlight, misc. field equip.	
AREA INSPECTED	EMBANKMENT			CHECK ACTION NEEDED			
	ITEM NO.	CONDITION	OBSERVATION	MONITOR	INVESTIGATE	REPAIR	OTHER
CREST	1	GENERAL SURFACE CONDITION	Good, no change				
	2	DISPLACEMENTS	None				
	3	EROSION	None				
	4	CREST ALIGNMENT	Good, no change				
	5	WEEDS OR BRUSH	No change				
	6	ANIMAL BURROWS	No change				
	7	EARTHEN EMERGENCY SPILLWAY	Good, no change				
	8						
	9						
UPSTREAM FACE	10	SLIDES, DISPLACEMENT OR BUDGES	None				
	11	EROSION	None				
	12	WEEDS OR BRUSH	None				
	13	PIEZOMETER CASINGS	Good, no change				
	14	ABUTMENT CONTACTS	Good, no change				
	15	ANIMALS BURROWS	No change				
	16	DISTANCE TO WATER	~850 ft. reservoir at typical low level				
	17						
	18						
	19						
ADDITIONAL COMMENTS, REFER TO ITEM NO. IF APPLICABLE							
1							

KOOTENAI DEVELOPMENT IMPOUNDMENT DAM ROUTINE OWNERS INSPECTION REPORT

PRINCIPAL INSPECTOR ON SITE: Kurt Hafferman, P.E.	OBSERVATION DATE (S)	11/30/10
OTHER PERSONNEL ON SITE: Dan Nelson from Billmayer & Hafferman, Inc. and Brandon Chapman and Jeremy Peterson from Chapman Const.	WEATHER CONDITIONS	Cldy, cool ~32°, calm, light snow, ±9" of snow on ground
Work Tasks: Measure flow, check URC02, measure piezometers, check box culvert, check drains, drain flow, measure LRC01, gauge height at LRC06.	EQUIPMENT	Well probe, long fiberglass tape, camera, flashlight, misc. field equip.

	DOWNSTREAM SLOPE AREA INSPECTED	DOWNSTREAM AND INSTRUMENTATION			CHECK ACTION NEEDED			
		ITEM NO.	CONDITION	OBSERVATION	MONITOR	INVESTIGATE	REPAIR	OTHER
	DOWNSTREAM SLOPE AREA INSPECTED	20	GENERAL SURFACE CONDITION	Good no change				
		21	DISPLACEMENTS	None				
		22	EROSION	None				
		23	LIFT ALIGNMENTS	Good				
		24	WEEDS OR BRUSH	No change				
		25	ANIMALS BURROWS	No change				
		26	EARTHEN EMERGENCY SPILLWAY	Good, no change				
		27	SEEPAGE	None				
	INSTRUMENTATION	28	ABUTMENT CONTACTS	Good, no change				
		29	PIEZOMETERS	Measured, see attached measurements	X			
		30	WEIRS	Gauges read, see attached	X			
		31	FLUMES	Gauges read, see attached	X			
		32	RESERVOIR LEVELS	Not read - typical low levels	X			
		33	RAINY CREEK INFLOW MEASUREMENTS @ URC02	GH= 0.32, Increase 8.1 gpm since Sept.	X			
		34	RAINY CREEK OUTFLOW BELOW DAM @ LRC01	GH= 0.67, 259 gpm this month	X			
		35	STREAM OUTFLOW BELOW MILL POND @LRC02	Not checked due to access	X			
		36	STREAM OUTFLOW FROM CARNEY CREEK @CC02	Not checked due to access	X			
		37	STREAM OUTFLOW FROM RAINY CREEK @LRC06	Increase 101 gpm since Sept.	X			
		38	FLUME 1-2-3-4	dropped 3.23 gpm since Sept.	X			

ADDITIONAL COMMENTS REFER TO ITEM NO. IF APPLICABLE

KOOTENAI DEVELOPMENT IMPOUNDMENT DAM ROUTINE OWNERS INSPECTION REPORT

PRINCIPAL INSPECTOR ON SITE: Kurt Hafferman, P.E.

OBSERVATION DATE (S)

11/30/10

OTHER PERSONNEL ON SITE: Dan Nelson from Billmayer & Hafferman, Inc. and Brandon Chapman and Jeremy Peterson from Chapman Const.

WEATHER CONDITIONS

Cldy, cool ~32°, calm, light snow, ±9" of snow on ground

Work Tasks: Measure flow, check URC02, measure piezometers, check box culvert, check drains, drain flow, measure LRC01, gauge height at LRC06.

EQUIPMENT

Well probe, long fiberglass tape, camera, flashlight, misc. field equip.

AREA INSPECTED	INSTRUMENTATION (CONT.) AND DOWNSTREAM TOE AREA			CHECK ACTION NEEDED			
	ITEM NO.	CONDITION	OBSERVATION	MONITOR	INVESTIGATE	REPAIR	OTHER
INSTRUMENTATION (CONT.)	39	FLUME 10-11-12	Removed, no longer used				
	40	FLUME 7-8	Decrease 1.21 gpm	X			
	41	WEIR 5	Very low flows +/- 0.1 gpm	X			
	42	WEIR 12	Increase 2.61 gpm since Sept.	X			
	43	DRAIN 6	Decrease 58.93 gpm since Sept.	X			
	44	SPILLWAY FLOW	None this year	X			
	45	F-Seep	Decrease 17.86 gpm since Spt.	X			
	46						
DOWNSTREAM TOE	47						
	48	ABUTMENTS	Good, no change				
	49	SEEPAGE NEAR TOE	None noted this year				
	50	SEEPAGE DOWNSTREAM OF TOE, LEFT SIDE	F-Seep = 0.04	X	X		
	51	SEEPAGE IN STREAM CHANNEL, LEFT SIDE	Not noticed due to snow				
	52	VEGETATION	More growth in channel and around drains. See below				
	53	CULVERT AT LOWER ROAD	Not monitored				
	54						
	55						
	56						

ADDITIONAL COMMENTS, REFER TO ITEM NO. IF APPLICABLE

Downstream Toe 52: The vegetation has already started to grow in near the toe drains this year. The additional growth is attributed to the heavy rains in late April and all of May, not to a change in the water at the toe. Weed cutting will be planned.

KOOTENAI DEVELOPMENT IMPOUNDMENT DAM ROUTINE OWNERS INSPECTION REPORT

PRINCIPAL INSPECTOR ON SITE: Kurt Hafferman, P.E.

OBSERVATION DATE (S)

11/30/10

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WEATHER CONDITIONS

Cldy, cool ~32°, calm, light snow, ±9" of snow on ground

Work Tasks: Measure flow, check URC02, measure piezometers, check box culvert, check drains, drain flow, measure LRC01, gauge height at LRC06.

EQUIPMENT

Well probe, long fiberglass tape, camera, flashlight, misc. field equip.

AREA INSPECTED	SPILLWAYS			CHECK ACTION NEEDED			
	ITEM NO.	CONDITION	OBSERVATION	MONITOR	INVESTIGATE	REPAIR	OTHER
PRINCIPAL SPILLWAY (BOX CULVERT AND OPEN CHANNEL CHUTE SPILLWAY)	58	ENTRANCE CONDITION	Good, no change				
	59	CENTERLINE CRACK FLOOR	Checked, no visual change	X			
	60	CENTERLINE CRACK CEILING	Checked, no visual change	X	X		
	61	TRANSVERSE JOINTS	No change, same CaCo3 deposits				
	62	GENERAL CONCRETE	Good to excellent, no change				
	63	SEEPAGE OR WATER	No moisture	X			
	64	OPEN CHANNEL CONCRETE	Good to excellent, no change				
	65	OPEN CHANNEL JOINTS	Good to excellent, no change				
OPEN CHANNEL STEEP CHUTE SPILLWAY	66	OPEN CHANNEL GENERAL	Good				
	67	JOINTS	Good				
	68	WALL CONCRETE	Visual from above, good				
	69	FLOOR CONCRETE	Visual from above, good				
	70	WALL TOPS	Good				
	71	WEEDS ALONG WALLS	None noted				
	72	STILLING BASIN RIPRAP	Good				
	73	WEED AND BRUSH IN STILLING BASIN	Cleared last fall, good				
	74						
	75						
	76						

ADDITIONAL COMMENTS, REFER TO ITEM NO. IF APPLICABLE

KOOTENAI DEVELOPMENT IMPOUNDMENT DAM ROUTINE OWNERS INSPECTION REPORT

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EQUIPMENT

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AREA INSPECTED	RESERVOIR AND UPSTREAM DRAINAGE BASIN			CHECK ACTION NEEDED			
	ITEM NO.	CONDITION	OBSERVATION	MONITOR	INVESTIGATE	REPAIR	OTHER
RESERVOIR	77	LEFT SIDE (TAILINGS SLOPE)	Stable				
	78	RIGHT SIDE	Stable				
	79	RESERVOIR LEVEL	Low level - Below gauge	X			
	80	WETLANDS	Good, no change				
	81	UPPER POND	Full, no change				
	82	DISTANCE FROM UPSTREAM SLOPE	~ 850 ft. typical low reservoir level	X			
	83						
	84						
UPSTREAM DRAINAGE BASIN	85						
	86	PRECIPITATION WY 2010-2011 AS OF DATE OF INSP	Low, 46% of normal	X			
	87	RECENT RAINS	2.2 inches of precipitation in the last month. Significant snow in the last week.	X			
	88	FIRE DANGER	None				
	89	CHANGES	None				
	90	VEGETATION	No change				
	91	RAINY CREEK DRAINAGE	No change				
	92	FLEETWOOD CREEK DRAINAGE	No change				
	93	MINE SITE	Shut Down for winter				
	94						
	95						

ADDITIONAL COMMENTS, REFER TO ITEM NO. IF APPLICABLE

KOOTENAI DEVELOPMENT IMPOUNDMENT DAM ROUTINE OWNERS INSPECTION REPORT

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AREA INSPECTED	EARTHEN SPILLWAY AND MILL POND AND OTHER			CHECK ACTION NEEDED			
	ITEM NO.	CONDITION	OBSERVATION	MONITOR	INVESTIGATE	REPAIR	OTHER
EARTHEN SPILLWAY	96	LEFT SIDE NEXT TO CREST	Good, no change				
	97	RIGHT SIDE	Good, no change				
	98	RESERVOIR LEVEL	Low, minimum level - Below Gauge				
	99	RIPRAP	Good, no change				
	100	ROAD CONDITION	Good, no change				
	101	DOWNSLOPE	Good, no change				
	102						
	103						
	104						
	105	CREST	Good				
MILL POND	106	UPSTREAM FACE	Good				
	107	DOWNSLOPE	Good				
	108	SPILLWAY FLOW	Low flow in spillway this year				
	109	RIPRAP IN SPILLWAY	Good, no change				
	110	ANIMALS ON EMBANKMENT	Not seen due to snow	X			
	111	ANIMALS IN SPILLWAY	No, beaver not present				
	112	RESERVOIR LEVEL	Low	X			
	113	Animals Monitoring	None noted during this visit.	X			

ADDITIONAL COMMENTS, REFER TO ITEM NO. IF APPLICABLE

I declare that the data collection and completion of this report titled the September 2010 Routine Owners Inspection Report for the Kootenai Development Impoundment Dam, known as the subject property was completed under my direction. This assessment has revealed the conditions discussed in the inspection form in connection with the property. I declare that the statements made in this report are true to the best of my belief and professional knowledge.



Kurtis M. Hafferman, P.E.

MT PE 10457

Date

NOVEMBER 30, 2010

R. 561

KOIGAWA IMPOUNDMENT DAM

DAM, KY.

COOL, CALM OVERCAST, LIGHT SNOW

33°

10:00 - 1:30

GUA665

URC-02

GH = 0.32'

LRC-01 GH 0.67'

MLBicney Flow Meter

<u>DIST</u>	<u>DEPTH</u>	<u>VELOCITY</u>
0.5	Ø	Ø
0.8	0.22	0.05
1.0	0.30	0.02
1.5	0.25	0.34
2.0	0.30	0.79
2.5	0.30	0.48
3.0	0.28	0.90
3.5	0.27	0.40
4.0	0.28	0.29
4.5	0.30	0.48
5.0	0.28	0.29
5.5	0.35	0.01
6.10	Ø	Ø

F-566P GH = 0.04

LRC-00 GH 0.44

PIEZOMETER READINGS

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P	100.4'	DRY	
P1	103.7'	DRY	
P2	120.25	WAT	122.3 BOT
P3	60.5	DRY	
P4	106.15	DRY	
P5	104.30	DRY	
PM6	65.70	WAT	66.83 BOT
PM2	104.25	WAT	104.80 BOT
PM5	50.07	WAT/BOT	
PM4	41.15	DRY	
PM3	51.78	DRY	
PM1	52.50	WAT	54.85 BOT
A8	8.26	WAT	28.20 BOT

DRAINS

D1	DRY		
D2	DRY		
D3	46°	CLEAR / STEADY	LOW FLOW
D4		CLEAR / STEADY	LOW FLOW
F1234	GH = 0.12'		
D5	GH = 0.25" VERY LOW, NEVER SEEN THIS LOW 44°	CLEAR / STEADY	
D6	GH = 11 3/4" 45°	CLEAR / STEADY	
D7	DRY		
D8	VERY LOW FLOW 1-2 gpm	CLEAR / STEADY	
F7-8	GH = 0.12' 44°		
D9	45°	LOW FLOW	CLEAR / STEADY
D10		LOW FLOW	CLEAR / STEADY 53°

D11 - LOW FLOW CLEAR / STEADY 52°

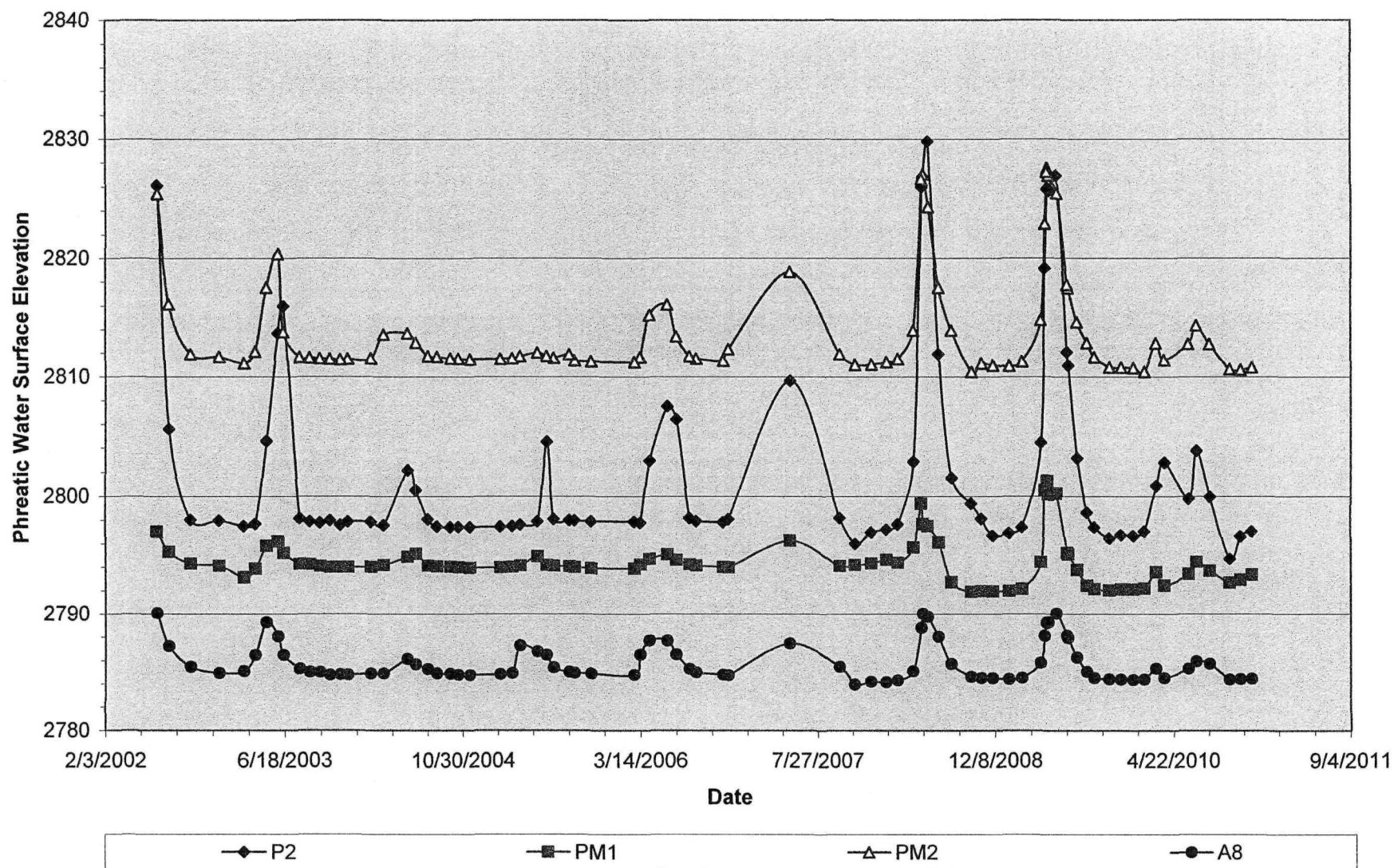
W12 - GH = 2.5"

D12 - LOW FLOW CLEAR / STEADY 55° - SUSPECT

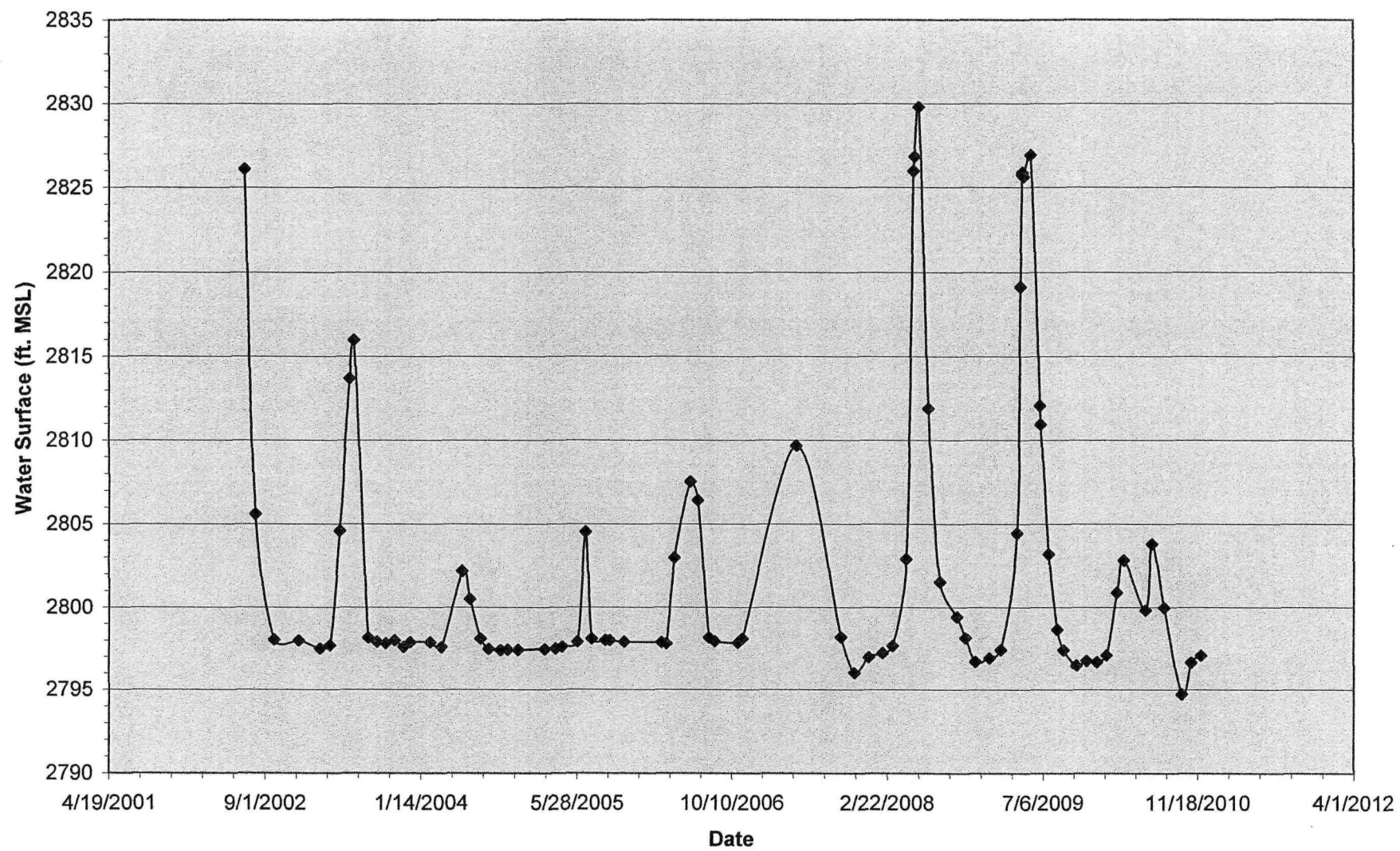
APPENDIX 3

UPDATED PIEZOMETER DATA AND GRAPHS

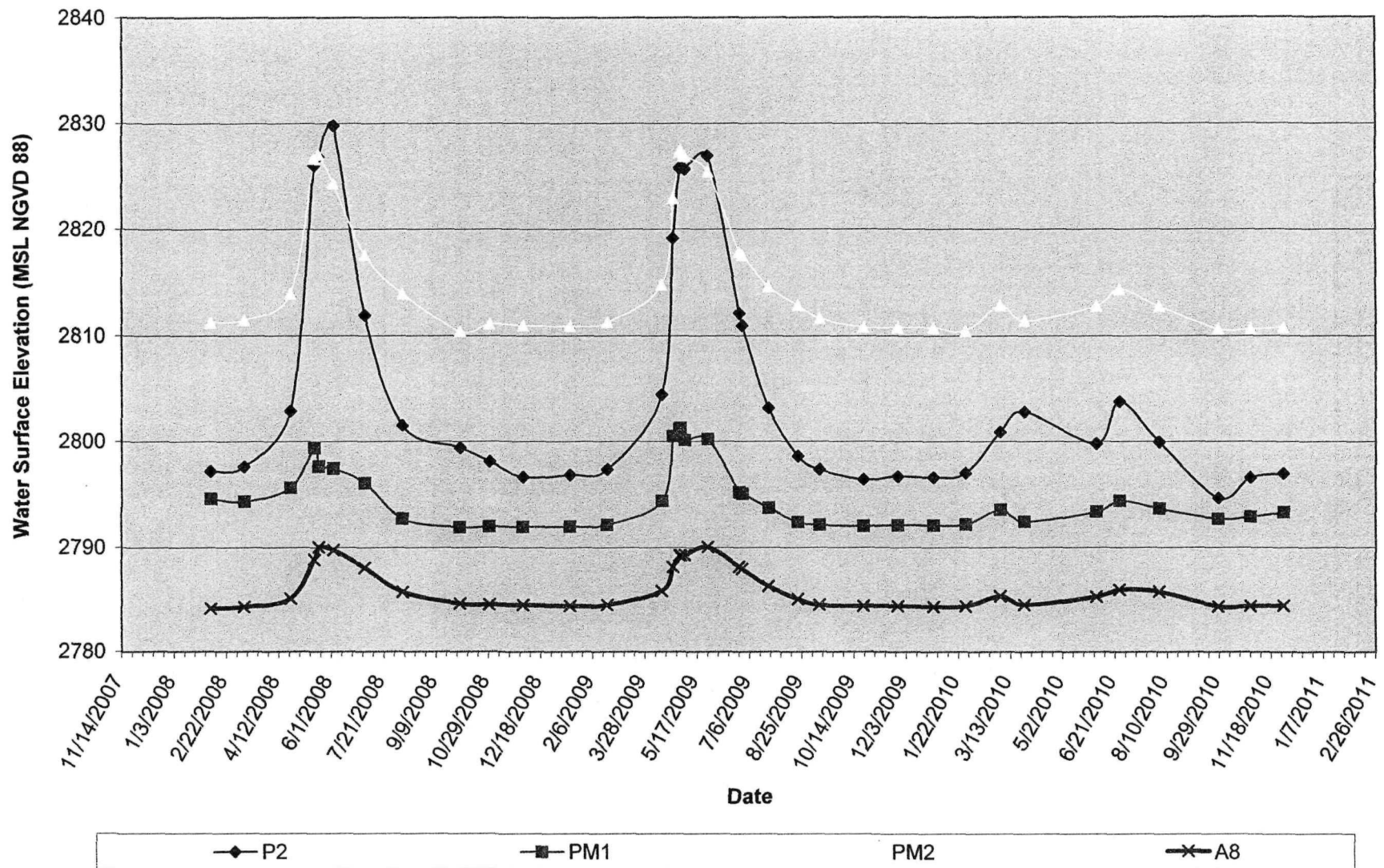
KDID Piezometers July 1, 2002 to November 30, 2010



KDID Piezometer P2



KDID All "Wet" Piezometer Elevations 2008 - 2009



[illegible]

Billmeyer & Hafferman Inc.													
Kootenai Development Impoundment Dam Annual Inspection													
3-Nov-10 Last Update													
Hafferman				Bold = Interpolated values									
Wet Piezometer Plots													
Piezometer Num		P2		Elev.	PM1		Elev.	PM2		Elev.	A8		Elev.
G.S.= 2917.321				G.S.= 2845.852				2915.04			G.S.= 2792.7		
Date	DW	TD	WS Elev	DW	TD	WS Elev	DW	TD	WS Elev	DW	TD	WS Elev	
11/30/2010	120.25	122.3	2797.071	52.5	54.85	2793.352	104.25	104.8	2810.79	8.26	28.2	2784.44	
10/29/2010	120.68	122	2796.641	52.92	54.85	2792.932	104.43	104.95	2810.61	8.3	28.2	2784.40	
9/28/2010	122.6	122.1	2794.721	53.15	54.8	2792.702	104.4	104.6	2810.64	8.34	28.3	2784.36	
8/2/2010	117.35	122.1	2799.971	52.15	54.8	2793.702	102.3	104.6	2812.74	6.96	28.3	2785.74	
6/25/2010	113.52	122.1	2803.801	51.41	54.8	2794.442	100.67	104.6	2814.37	6.75	28.3	2785.95	
6/3/2010	117.5	122.1	2799.821	52.44	54.8	2793.412	102.27	104.6	2812.77	7.4	28.3	2785.30	
3/26/2010	114.49	122.1	2802.831	53.39	54.8	2792.462	103.62	104.6	2811.42	8.19	28.3	2784.51	
3/3/2010	116.42	122.1	2800.901	52.25	54.8	2793.602	102.2	104.6	2812.84	7.37	28.3	2785.33	
1/29/2010	120.24	122.1	2797.081	53.65	54.8	2792.202	104.6	104.6	2810.44	8.32	28.3	2784.38	
12/29/2009	120.64	122.1	2796.681	53.74	54.8	2792.112	104.28	104.6	2810.76	8.37	28.3	2784.33	
11/25/2009	120.56	122.1	2796.761	53.71	54.8	2792.142	104.25	104.6	2810.79	8.31	28.3	2784.39	
10/23/2009	120.85	122.1	2796.471	53.81	54.8	2792.042	104.22	104.6	2810.82	8.3	28.3	2784.40	
9/11/2009	119.91	122.1	2797.411	53.69	54.8	2792.162	103.39	104.6	2811.65	8.2	28.3	2784.50	
8/21/2009	118.67	122.1	2798.651	53.42	54.8	2792.432	102.18	104.6	2812.86	7.66	28.3	2785.04	
7/24/2009	114.13	122.1	2803.191	52.07	54.8	2793.782	100.41	104.6	2814.63	6.42	28.3	2786.28	
6/29/2009	106.36	122.1	2810.961	50.73	54.8	2795.122	97.52	104.6	2817.52	4.75	28.3	2787.95	
6/26/2009	105.24	122.1	2812.081	50.6	54.8	2795.252	97.24	104.6	2817.8	4.565	28.3	2788.14	
5/27/2009	90.4	122.1	2826.921	45.62	54.8	2800.232	89.6	104.6	2825.44	2.65	28.3	2790.05	
5/5/2009	91.68	122.1	2825.641	45.71	54.8	2800.142	88.15	104.6	2826.89	3.41	28.3	2789.29	
5/1/2009	91.45	122.1	2825.871	44.56	54.8	2801.292	87.52	104.6	2827.52	3.44	28.3	2789.26	
4/30/2009	91.55	122.1	2825.771	44.66	54.8	2801.192	87.81	104.6	2827.23	3.48	28.3	2789.22	
4/24/2009	98.18	122.1	2819.141	45.37	54.8	2800.482	92.13	104.6	2822.91	4.59	28.3	2788.11	
4/13/2009	112.87	122.1	2804.451	51.43	54.8	2794.422	100.24	1					

Piezometer Num P2				Elev.		PM1				Elev.		PM2				Elev.		A8				Elev.	
G.S.= 2917.321				G.S.= 2845.852				2915.04				G.S.= 2792.7											
Date	DW	TD	WS Elev	DW	TD	WS Elev	DW	TD	WS Elev	DW	TD	WS Elev											
1/15/2009	120.4	122.1	2796.921	53.86	54.8	2791.992	104.11	104.6	2810.93	8.3	28.3	2784.40											
12/1/2008	120.61	122.1	2796.711	53.9	54.8	2791.952	104.07	104.6	2810.97	8.21	28.3	2784.49											
10/30/2008	119.17	122.1	2798.151	53.87	54.8	2791.982	103.91	104.6	2811.13	8.18	28.3	2784.52											
10/2/2008	117.9	122.1	2799.421	53.94	54.8	2791.912	104.6	104.6	2810.44	8.09	28.3	2784.61											
8/8/2008	115.78	122.1	2801.541	53.12	54.8	2792.732	101.1	104.6	2813.94	6.97	28.3	2785.73											
7/3/2008	105.4	122.1	2811.921	49.73	54.8	2796.122	97.49	104.6	2817.55	4.65	28.3	2788.05											
6/3/2008	87.52	122.1	2829.801	48.36	54.8	2797.492	90.71	104.6	2824.33	2.93	28.3	2789.77											
5/20/2008	90.49	122.1	2826.831	48.17	54.8	2797.682	88	104.6	2827.04	2.67	28.3	2790.03											
5/16/2008	91.34	122.1	2825.981	46.45	54.8	2799.402	88.4	104.6	2826.64	3.88	28.3	2788.82											
4/23/2008	114.42	122.1	2802.901	50.16	54.8	2795.692	101.1	104.6	2813.94	7.6	28.3	2785.10											
3/10/2008	119.65	122.1	2797.671	51.47	54.8	2794.382	103.53	104.6	2811.51	8.4	28.3	2784.30											
2/7/2008	120.1	122.1	2797.221	51.2	54.8	2794.652	103.8	104.6	2811.24	8.55	28.3	2784.15											
12/26/2007	120.34	122.1	2796.981	51.52	54.8	2794.332	103.98	104.6	2811.06	8.52	28.3	2784.18											
11/9/2007	121.3	122.1	2796.021	51.65	54.8	2794.202	104	104.6	2811.04	8.75	28.3	2783.95											
9/27/2007	119.12	122.1	2798.201	51.75	54.8	2794.102	103.12	104.6	2811.92	7.22	28.3	2785.48											
5/8/2007	107.64	122.1	2809.681	49.57	54.8	2796.282	96.18	104.6	2818.86	5.22	28.3	2787.48											
11/14/2006	119.21	122.1	2798.111	51.88	54.8	2793.972	102.72	104.6	2812.32	7.96	28.3	2784.74											
10/30/2006	119.48	122.1	2797.841	51.82	54.8	2794.032	103.69	104.6	2811.35	7.92	28.3	2784.78											
8/16/2006	119.39	122.1	2797.931	51.72	54.8	2794.132	103.51	104.6	2811.53	7.72	28.3	2784.98											
7/28/2006	119.14	122.1	2798.181	51.61	54.8	2794.242	103.32	104.6	2811.72	7.42	28.3	2785.28											
6/21/2006	110.89	122.1	2806.431	51.23	54.8	2794.622	101.62	104.6	2813.42	6.18	28.3	2786.52											
5/27/2006	109.78	122.1	2807.541	50.76	54.8	2795.092	98.92	104.6	2816.12	4.98	28.3	2787.72											
4/7/2006	114.34	122.1	2802.981	51.14	54.8	2794.712	99.79	104.6	2815.25	4.96	28.3	2787.74											
3/12/2006	119.52	122.1	2797.801	51.62	54.8	2794.232	103.39	104.6	2811.65	6.18	28.3	2786.52											
2/24/2006	119.44	122.1	2797.881	51.95	54.8	2793.902	103.79	104.6	2811.25	7.92	28.3	2784.78											
10/27/2005	119.41	122.1	2797.911	51.94	54.8	2793.912	103.76	104.6	2811.28	7.81	28.3	2784.89											
9/10/2005	119.32	122.1	2798.001	51.84	54.8	2794.012	103.66	104.6	2811.38	7.76	28.3	2784.94											
8/27/2005	119.3	122.1	2798.021	51.78	54.8	2794.072	103.14	104.6	2811.9	7.68	28.3	2785.02											
7/14/2005	119.22	122.1	2798.101	51.74	54.8	2794.112	103.46	104.6	2811.58	7.28	28.3	2785.42											
6/24/2005	112.79	122.1	2804.531	51.68	54.8	2794.172	103.29	104.6	2811.75	6.22	28.3	2786.48											

Piezometer Num P2 Elev.				PM1 Elev.			PM2 Elev.			A8 Elev.		
G.S.= 2917.321				G.S.= 2845.852			2915.04			G.S.= 2792.7		
Date	DW	TD	WS Elev	DW	TD	WS Elev	DW	TD	WS Elev	DW	TD	WS Elev
5/29/2005	119.42	122.1	2797.901	50.92	54.8	2794.932	103.01	104.6	2812.03	5.91	28.3	2786.79
4/10/2005	119.7	122.1	2797.621	51.72	54.8	2794.132	103.32	104.6	2811.72	5.42	28.3	2787.28
3/19/2005	119.82	122.1	2797.501	51.82	54.8	2794.032	103.49	104.6	2811.55	7.79	28.3	2784.91
2/13/2005	119.86	122.1	2797.461	51.87	54.8	2793.982	103.54	104.6	2811.5	7.86	28.3	2784.84
11/19/2004	119.9	122.1	2797.421	51.91	54.8	2793.942	103.59	104.6	2811.45	7.96	28.3	2784.74
10/17/2004	119.89	122.1	2797.431	51.84	54.8	2794.012	103.52	104.6	2811.52	7.91	28.3	2784.79
9/24/2004	119.91	122.1	2797.411	51.81	54.8	2794.042	103.49	104.6	2811.55	7.82	28.3	2784.88
8/17/2004	119.84	122.1	2797.481	51.79	54.8	2794.062	103.34	104.6	2811.7	7.79	28.3	2784.91
7/22/2004	119.21	122.1	2798.111	51.72	54.8	2794.132	103.29	104.6	2811.75	7.42	28.3	2785.28
6/18/2004	116.8	122.1	2800.521	50.69	54.8	2795.162	102.14	104.6	2812.9	7.01	28.3	2785.69
5/25/2004	115.14	122.1	2802.181	50.95	54.8	2794.902	101.34	104.6	2813.7	6.55	28.3	2786.15
3/19/2004	119.74	122.1	2797.581	51.68	54.8	2794.172	101.46	104.6	2813.58	7.8	28.3	2784.90
2/12/2004	119.45	122.1	2797.871	51.82	54.8	2794.032	103.52	104.6	2811.52	7.8	28.3	2784.90
12/10/2003	119.44	122.1	2797.881	51.86	54.8	2793.992	103.54	104.6	2811.5	7.91	28.3	2784.79
11/19/2003	119.72	122.1	2797.601	51.84	54.8	2794.012	103.59	104.6	2811.45	7.9	28.3	2784.80
10/21/2003	119.32	122.1	2798.001	51.84	54.8	2794.012	103.54	104.6	2811.5	7.94	28.3	2784.76
9/23/2003	119.51	122.1	2797.811	51.76	54.8	2794.092	103.49	104.6	2811.55	7.7	28.3	2785.00
8/26/2003	119.42	122.1	2797.901	51.62	54.8	2794.232	103.42	104.6	2811.62	7.68	28.3	2785.02
7/29/2003	119.16	122.1	2798.161	51.58	54.8	2794.272	103.38	104.6	2811.66	7.39	28.3	2785.31
6/14/2003	101.34	122.1	2815.981	50.62	54.8	2795.232	101.23	104.6	2813.81	6.22	28.3	2786.48
5/30/2003	103.62	122.1	2813.701	49.67	54.8	2796.182	94.67	104.6	2820.37	4.62	28.3	2788.08
4/28/2003	112.74	122.1	2804.581	50.02	54.8	2795.832	97.48	104.6	2817.56	3.41	28.3	2789.29
3/28/2003	119.62	122.1	2797.701	51.99	54.8	2793.862	102.91	104.6	2812.13	6.21	28.3	2786.49
2/24/2003	119.82	122.1	2797.501	52.74	54.8	2793.112	103.9	104.6	2811.14	7.62	28.3	2785.08
12/18/2002	119.34	122.1	2797.981	51.74	54.8	2794.112	103.36	104.6	2811.68	7.77	28.3	2784.93
9/30/2002	119.28	122.1	2798.041	51.55	54.8	2794.302	103.12	104.6	2811.92	7.22	28.3	2785.48
7/31/2002	111.72	122.1	2805.601	50.54	54.8	2795.312	98.87	104.6	2816.17	5.46	28.3	2787.24
6/28/2002	91.22	122.1	2826.101	48.82	54.8	2797.032	89.63	104.6	2825.41	2.62	28.3	2790.08